

Borehole

41-12-07Log Event **A****Borehole Information**

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|-------------------------|--------------------------------|----------------------------------|
| Farm : <u>SX</u> | Tank : <u>SX-112</u> | Site Number : <u>299-W23-114</u> |
| N-Coord : <u>35,206</u> | W-Coord : <u>75,895</u> | TOC Elevation : <u>661.05</u> |
| Water Level, ft : | Date Drilled : <u>4/4/1962</u> | |

Casing Record

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|----------------------------|-------------------------------|--------------------|
| Type : <u>Steel-welded</u> | Thickness : <u>0.280</u> | ID, in. : <u>6</u> |
| Top Depth, ft. : <u>0</u> | Bottom Depth, ft. : <u>75</u> | |

Equipment Information

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|-----------------------------------|---|------------------------------------|
| Logging System : <u>1</u> | Detector Type : <u>HPGe</u> | Detector Efficiency: <u>35.0 %</u> |
| Calibration Date : <u>03/1995</u> | Calibration Reference : <u>GJPO-HAN-1</u> | |

Logging Information

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|---------------------------------|---------------------------------|--------------------------------------|
| Log Run Number : <u>1</u> | Log Run Date : <u>7/7/1995</u> | Logging Engineer: <u>Mike Widdop</u> |
| Start Depth, ft.: <u>0.0</u> | Counting Time, sec.: <u>100</u> | L/R : <u>L</u> Shield : <u>N</u> |
| Finish Depth, ft. : <u>69.5</u> | MSA Interval, ft. : <u>0.5</u> | Log Speed, ft/min.: <u>n/a</u> |

| | | |
|---------------------------------|---------------------------------|--------------------------------------|
| Log Run Number : <u>2</u> | Log Run Date : <u>7/10/1995</u> | Logging Engineer: <u>Mike Widdop</u> |
| Start Depth, ft.: <u>69.0</u> | Counting Time, sec.: <u>100</u> | L/R : <u>L</u> Shield : <u>N</u> |
| Finish Depth, ft. : <u>73.0</u> | MSA Interval, ft. : <u>0.5</u> | Log Speed, ft/min.: <u>n/a</u> |

Borehole

41-12-07

Log Event A

Analysis Information

Analyst : D.C. StromswoldData Processing Reference : Data Analysis Manual Ver. 1Analysis Date : 11/22/1995**Analysis Notes :**

Borehole 41-12-07 was logged in two runs in a move-stop-acquire mode that collected spectra for 100 seconds every 0.5 ft. Gain drifts during the first run necessitated two different energy calibrations during data processing to maintain proper radionuclide identification, whereas run 2 was analyzed using only one energy calibration.

Verification spectra collected before the runs showed that the tool was operating acceptably, although the resolution before run 1 was about 10 percent poorer than normal.

Correction factors for 0.25-in.-thick steel casing were used during data processing.

Cs-137 was the only man-made radionuclide identified, occurring continuously from the surface to about 16 ft, with isolated values near the minimum detection limit down to about 70 ft. The maximum measured concentration (other than very near the surface) was about 1 pCi/g at 9 ft.

The total gamma log indicates lithology changes below 62 ft.

Repeatability of results at the run overlap depths was within the statistical uncertainties of the calculated concentrations.

See the Tank Summary Data Report for SX-112 for additional log analysis.

Log Plot Notes:

Three log plots are provided. One shows the Cs-137 concentrations. Another shows the naturally occurring radionuclides (K-40, U-238, and Th-232), which can be used for lithology interpretations. A combination plot includes logs of Cs-137, natural gamma, total gamma derived from the spectral data, and data from the WHC Tank Farms gross gamma logging system. The headings of the Cs-137 and natural gamma plots identify the specific gamma rays used to calculate the concentrations.

Uncertainty bars on the plots show the statistical uncertainties for the measurements as 95-percent confidence intervals. Open circles on the plots give the minimum detectable activity (MDA). The MDA of a radionuclide represents the lowest concentration at which positive identification of a gamma-ray peak is statistically defensible. If the reported concentration is slightly above the MDA, the 95-percent confidence interval may extend below the MDA value and detection is not ensured with 95-percent certainty.

The Tank Farms gross gamma plot is the latest available from WHC. No attempt has been made to adjust the plot for depth discrepancies.